

## **THERMALLY-ACTIVATED FRAGRANCE DISPENSER**

By

5

Chris J. Gardner

And

Brian P. Murphy, M.D.

10

### **BACKGROUND**

#### **1. Field of the Invention**

The present invention concerns generally a fragrance dispenser for perfuming, air freshening, or otherwise pleasurably affecting the olfactory senses. In

15

particular, the present invention is directed to a non-electric, non-mechanical, thermally-activated fragrance dispenser for use with a computer monitor, or the like, and attached thereto, wherein waste heat generated by electrical or electronic circuitry attendant to the monitor, upon exiting from the monitor case or housing via monitor cooling vents, is absorbed by the thermally conductive

20 fragrance dispenser receptacle and activates or accelerates perfuming of the fragrance matter contained therein.

## 2. Description of Related Art

Various devices for perfuming, deodorizing, or otherwise altering the sense of smell of the air surrounding an individual or group have existed for millennia; their utilization is ubiquitous in virtually all examples of modern society. Places of religious worship, automobiles, public restrooms, and bathrooms are just a small sample of the many places where one may find burning or smoldering incense, auto air fresheners hanging from the rear view mirror, air fresheners secreted in bathroom tissue dispensers, attached to doors, or plugged into electrical outlets. Some such devices function in the ambient environment; other devices require heating, e.g. subliming, of the fragrance material and/or mechanical movement of the air proximate thereto, to activate or accelerate perfuming the surrounding air. Heating of the fragrance material often is accomplished by either combustion retardant means or utilization of an electrical heating element configured within the fragrance dispenser.

Some fragrance dispensers urge the flow of air across and through the fragrance material to expedite perfuming the surrounding air with the scent of the fragrance. In some cases, this action is achieved with a mechanical blower; in other cases, the action is achieved by mechanically moving the fragrance material through the air. United States Patent No. 5,148,984 "DEVICE FOR DISPENSING A VAPORIZABLE MATERIAL" is incorporated herein by reference for purposes of indicating the background of the present invention or illustrating the mature state of the art for dispensing the scent of a vaporizable material, in

particular, moving the fragrance material through the air by means of attaching the fragrance material holder to a door.

Some fragrance dispensers are intended for personal use, either worn as an

5 adornment to clothing or decorated with appropriate indicia to suggest personalized, individual use of the dispenser. United States Patent No.

4,465,232 "DEVICE FOR CARRYING A SCENTED ELEMENT FOR AFFIXING TO THE BODY, ARTICLES OF CLOTHING OR PACKAGES" and United States Patent No. 4,909,438 "AIR FRESHENER DISPENSER" are incorporated herein

10 by reference for purposes of indicating the background of the present invention or illustrating the mature state of the art for dispensing the scent of a vaporizable material, in particular, illustrating the state of the art in personalized fragrance dispensing adornments and individualized dispensers, respectively.

15 The present invention is intended for personal use in the vicinity of an operating computer monitor. In the present invention, enlisting the use of waste heat exiting the cooling vents of a computer monitor, typically utilizing a cathode ray tube and attendant electronic circuitry, activates and accelerates perfuming the surrounding air with a fragrance. Such vents typically comprise an array or field  
20 of perforations in the top and/or sides of the cabinet or housing of the monitor to expedite the removal of heated air from the vicinity of the monitor's electronic circuitry.

Whether in individual cubicles or in massed, open floor array, many modern workers spend a very large portion of their working day seated before an electronic computer monitor at a computer workstation. For corporate efficacy, these workstations tend to be uniformly unimaginative, devoid of individual personality. The work performed at these workstations may sometimes be creative and exciting, more often the work is repetitious and somewhat boring. In some work situations, fresh air ventilation may be less than optimum, compounding a potential adverse influence on worker performance.

- 10 To personalize these workstations and infuse a modicum of pleasure to the workstation task, workers often affix photographs, cartoons, and other personal indicia to the computer monitor. Another addition to workstation personalization and worker pleasure would be the use of a personalized, individual fragrance perfumed into the air immediate to the computer monitor. To improve worker
- 15 performance and give the worker a sense of individualism and identity, the present invention provides an individual air freshening and perfuming dispenser affixed to the individual workers' computer monitor. No burning, smoldering device or electrically heated device is needed, only the waste heated air exiting the cooling vents of the monitor cabinet. This is very economical, incurring no
- 20 additional cost of electrical power or incurring the risk of smoke or fire in the work area.

## SUMMARY

An object of the present invention is to provide a thermally activated fragrance dispenser utilizing waste heat venting from an electronic computer monitor to

- 5 perfume the air adjacent thereat for the individual pleasure of the monitor operating personnel. Another object of the present invention is to provide a thermally activated fragrance dispenser that neither requires connection to an electrical circuit nor consumes additional electrical or other energy resources.

Yet another object of the present invention is to provide a thermally activated

- 10 fragrance dispenser that does not perfume the air until the electronic monitor is energized and expelling waste heat from its cooling vents. A further object of the present invention is to provide a thermally activated fragrance dispenser that neither requires moving parts nor requires moving the fragrance perfuming material through the air. Still another object of the present invention is to provide
- 15 a thermally activated fragrance dispenser that is simple and economical to install and operate. Another object of the present invention is to provide a thermally activated fragrance dispenser that may utilize a variety of thermally activated fragrance perfuming materials.

**BRIEF DESCRIPTION OF THE DRAWINGS**

1. Fig. 1 is a perspective view of an embodiment of a thermally activated  
fragrance dispenser mounted over the top waste heat cooling vents of an  
5 electronic monitor, according to the present invention.

2. Fig. 2 is a perspective view of a preferred embodiment of a thermally  
activated fragrance dispenser featuring perforations in both the lid and  
sidewall thereof, for use with an electronic monitor, according to the  
present invention.

3. Fig.3 is a partially exploded perspective view of an alternative embodiment  
of a thermally activated fragrance dispenser featuring grilles in both the lid  
and closed peripheral sidewall thereof, for use with an electronic monitor,  
according to the present invention. This view is partially exploded to more  
clearly depict the thermally activated fragrance perfuming material  
10 disposed within the closed peripheral sidewall and resting against the  
interior surface of the heat-collecting base.

4. Fig. 4 is a perspective view of a preferred embodiment of a thermally  
conductive base for collecting waste heat exiting the monitor cooling vents  
and transferring the heat to a thermally activated fragrance perfuming  
material disposed on the interior surface of the base, according to the  
20 present invention. The base illustrated in Fig. 4 is fabricated from a  
malleable, heat conducting material accordion-folded to produce generally

rectilinear serriform topography for the heat absorbing base exterior  
bottom surface.

5 Fig. 5 is a bottom plan view of Fig. 4 illustrating a preferred embodiment of  
a thermally conductive base for collecting waste heat exiting the monitor  
cooling vents and transferring the heat to a thermally activated fragrance  
perfuming material proximate the interior surface of the base, according to  
the present invention. Further illustrated is the base exterior bottom  
surface including a heat-absorbing base exterior bottom surface,  
exhibiting generally rectilinear serriform topography, and a mounting  
10 surface and two-sided adhesive mounting pads attached thereto.

6 Fig. 6 is an end view of Fig. 4 illustrating a preferred embodiment of a  
thermally conductive base for collecting waste heat exiting the monitor  
cooling vents and transferring the heat to a thermally activated fragrance  
perfuming material proximate the interior surface of the base, according to  
the present invention. Further illustrated is the interior surface and the  
15 base exterior bottom surface including a heat-absorbing base exterior  
bottom surface, exhibiting a generally rectilinear serriform topography, and  
a mounting surface and mounting pads attached thereto.

7 Fig. 7 is a perspective view of an alternative embodiment of a thermally  
20 conductive base for collecting waste heat exiting the monitor cooling vents  
and transferring the heat to a thermally activated fragrance perfuming  
material proximate the interior surface of the base, according to the  
present invention. The base illustrated in Fig. 7 is fabricated from a heat

conducting material cast, molded, extruded, or otherwise modified to produce generally rectilinear serriform topography for the heat-absorbing base exterior bottom surface.

8. Fig. 8 is a bottom plan view of Fig. 7 illustrating an alternative embodiment of a thermally conductive base for collecting waste heat exiting the monitor cooling vents and transferring the heat to a thermally activated fragrance perfuming material proximate the interior surface of the base, according to the present invention. Further illustrated is the base exterior bottom surface including a generally rectilinear serriform heat-absorbing base exterior bottom surface and a mounting surface and a portion of the two part hooks and loops mounting pads attached thereto.

9. Fig. 9 is an end view of Fig. 7 illustrating an alternative embodiment of a thermally conductive base for collecting waste heat exiting the monitor cooling vents and transferring the heat to a thermally activated fragrance perfuming material proximate the interior surface of the base, according to the present invention. Further illustrated is the interior surface and the base exterior bottom surface including a generally rectilinear serriform topography, heat-absorbing base exterior bottom surface and a mounting surface and mounting pads attached thereto.

10. Fig.10 is a perspective view of an alternative embodiment of a thermally activated fragrance dispenser featuring a perforated lid, a perforated sidewall, and a heat-collecting base, all in a non-parallelepiped shape, for



use with an electronic monitor, according to the present invention. The perforations may depict a decorative pattern or spell a name or message.

11. Fig. 11 is a bottom plan view of Fig. 10 illustrating an alternative embodiment of a thermally conductive base for collecting waste heat exiting the monitor cooling vents and transferring the heat to a thermally activated fragrance perfuming material proximate the interior surface of the base, according to the present invention. Further illustrated is the base exterior bottom surface including a heat-absorbing base exterior bottom surface, exhibiting generally curvilinear serriform topography, and a mounting surface and two-sided adhesive mounting pads attached thereto.

12. Fig. 12 is a sectional view of Fig. 11 illustrating an alternative embodiment of a thermally conductive base for collecting waste heat exiting the monitor cooling vents and transferring the heat to a thermally activated fragrance perfuming material proximate the interior surface of the base, according to the present invention. Further depicted is the thermally activated fragrance perfuming material, interior surface and the base exterior bottom surface including a generally curvilinear serriform topography heat-absorbing base exterior bottom surface and a mounting surface and two-sided adhesive mounting pad attached thereto.

## DESCRIPTION OF THE PREFERRED EMBODIMENT

The preferred embodiment of a thermally activated fragrance dispenser according to the present invention is generally a parallelepiped receptacle with a lid **50** adapted thereto, the lid **50** and closed peripheral sidewall **40** of the

5 receptacle featuring through openings to permit perfuming the air in the vicinity of the dispenser. In the preferred embodiment, base **20** and closed peripheral sidewall **40** are fixedly conjoined, forming a receptacle having a sidewall interior volume sufficient to receive and contain therein a thermally-activated fragrance perfuming material **18** (not claimed in the present invention). The primary

10 purpose of lid **50** is to securely retain perfuming material **40** within the sidewall interior volume, particularly when the present invention is mounted against a vertical side cooling vent **14** of a monitor **10**. Lid **50** need be opened or closed only to remove or replace perfuming material **18**; it does not need to be manipulated during normal operational use of the present invention.

15 Consequently, a wide variety of techniques may be employed to attach lid **50** to the receptacle. In the preferred embodiment, the principal component of any combination used to attach and secure lid **50** to the receptacle is a hinge or snap-on crimp, or a combination thereof. In a perspective view, Fig. 1 depicts a thermally activated fragrance dispenser according to the present invention

20 installed atop the top waste-heat cooling vent **12** of electronic computer monitor **10**. An alternative installation could posit the present invention against the side waste-heat cooling vent **14**. In either installation, waste-heat exiting the cooling vents when monitor **10** is energized is absorbed within the present invention.

The collected thermal energy is transferred thereupon to a thermally activated fragrance perfuming material **18** (not claimed in the present invention) disposed within the present invention. Perfuming of the air adjacent monitor **10** occurs as the warmed fragrant air within the present invention exits the dispenser via a plurality of sidewall perforations **42** of closed peripheral sidewall **40** and a plurality of lid perforations **52** of lid **50**, as illustrated in perspective views Fig. 1 and Fig 2. Perforations **42** and **52** can be arranged to form a decorative pattern or present a text, such as a name, event, or phrase.

- 10 Typically, the present invention is installed over and proximate to either the top or side cooling vents by means of at least one two-sided adhesive mounting pad **33**. Alternatively, installing the present invention on the cooling vents **12** and **14** could be achieved with at least one two-part conjoined hooks and loops mounting pad, such as Velcro ®, a first hooks and loops mounting pad **35** affixed to the present invention and a second hooks and loops mounting pad **37** affixed to the monitor **10**.

- 20 An alternative means for perfuming the air adjacent monitor **10** utilizes a lid grille **54** of lid **50** and a sidewall grille **44** of closed peripheral sidewall **40** instead of lid perforations **52** and sidewall perforations **42**, respectively. This alternative variation is shown in Fig. 3, which further illustrates closed peripheral sidewall **40** having a sidewall interior surface **43** and a sidewall exterior surface **45**. Fig. 3 is a partially exploded view to clarify depiction of thermally activated fragrance

material **18** (not claimed in the present invention) resting on base interior surface **24** of heat absorbing base **20**. When the present invention is completely assembled and is in a state of operational readiness, lid peripheral edge **51**, of lid **50**, matches the geometry and rests proximate to upper peripheral edge **46** of closed peripheral sidewall **40**.

Fig 4, 5, 6 illustrate, in more detail, the preferred embodiment of the heat absorbing base **20** of the present invention. The preferred material for base **20** is metal. In the preferred embodiment, heat

absorbing base **20** is fabricated from a malleable, thermally conductive material, accordion-folded to produce a heat-absorbing base exterior bottom surface **30**, exhibiting a generally rectilinear serriform topography, upon base exterior bottom surface **26**. At least one portion of base exterior bottom surface **26** is configured for use as a mounting surface **28**, to receive at least one two-sided adhesive mounting pad **33** or alternately, at least one portion of a dual hooks and loops mounting pad, comprising a first hooks and loops mounting pad **35** and a second hooks and loops mounting pad **37**.

Fig. 5, a bottom plan view of base **20** depicts the projected area, or "footprint", bounded by base periphery **22**. During intended use of the thermally activated dispenser, the "footprint" is the base area of the present invention covering a portion of one of the waste-heat cooling

vents of monitor **10**. It is readily appreciated, that for a given “footprint”, the heat-absorbing base exterior bottom surface **30**, exhibiting a generally rectilinear serriform topography in the preferred embodiment of the present invention, of base **20** substantially increases the effective

5 heat absorbing surface area, and consequently increases the efficacy of the transfer of thermal energy from the cooling vents to thermally activated fragrance perfuming material **18** (not claimed in the present invention).

- 10 To form an appropriate receptacle for perfuming material **18**, lower peripheral edge **48** of closed peripheral sidewall **40** is adaptively and permanently conjoined by conventional means, e.g. solder, glue, crimping, to base periphery **22** of base **20**. Many combinations could be utilized; however, in the preferred embodiment the principal
- 15 component of any such combination is epoxy resin. To retain the perfuming material within the receptacle, lid **50** is adapted to fit the general shape of upper peripheral edge **46** of sidewall **40**.

A variant of the preferred embodiment of the present invention is use of

20 a thermally conductive material for heat absorbing base **20**, where the material is not malleable. In this variation, shown in Fig. 7, 8, 9, the material for base **20** is forged, pressed, cast, extruded, molded, or machined to produce, from base exterior bottom surface **26**, a

heat-absorbing base exterior bottom surface **30**, exhibiting a generally rectilinear serriform topography in an alternative embodiment of the present invention, and at least one mounting surface **28**. The interior surface **24** may be flat. Fig. 7, 8, 9 also display a variation in the

5 method for installing the fragrance dispenser against the cooling vents of monitor **10**. In this instance, a two-part hooks and loops mounting pad, such as Velcro®, comprises a first hooks and loops mounting pad **35**, adhesively affixed to mounting surface **28**, and a second hooks and loops mounting pad **37**, adhesively affixed to top cooling vent **12** or side cooling vent **14** of monitor **10**. The fragrance dispenser according to the present invention is installed upon the cooling vents of monitor **10** by conjoining pad **35** and pad **37**.

Although the general shape of the preferred embodiment of the present invention is parallelepiped, other shapes are not precluded. Fig. 10, 11, 12 illustrate an alternate embodiment of the fragrance dispenser according to the present invention. Fig. 10 is a perspective view of a non-parallelepiped version of the present invention. The plurality of sidewall perforations **42** and lid perforations **52** in sidewall **40** and lid **50**, respectively, enable perfuming of the air proximate monitor **10** from the thermally activated fragrance perfuming material heated within the sidewall **40** and lid **50** of the present invention. The perforations may define a decorative pattern or otherwise provide a text message or

name. The general shape of the alternate embodiment need not be symmetrical.

Fig. 11 is a bottom plan view of an alternate embodiment of the present

5 invention. Shown are the base periphery **22**, the heat-absorbing base exterior bottom surface **30**, featuring a generally curvilinear serriform topography in the alternate embodiment, and the two-sided adhesive mounting pad **33**. Fig 12 is a sectional view of Fig. 11, illustrating the thermally activated fragrance perfuming material **18** resting on interior

10 surface **24** of base **20**. Lower peripheral edge **48** of closed peripheral sidewall **40** is adaptively and fixedly conjoined with base periphery **22**, forming a receptacle to contain therein, perfuming material **18**.

Attributes of closed peripheral sidewall **40** include sidewall interior surface **43**, sidewall exterior surface **45** and a sidewall interior volume.

15 Lid **50** is adapted to fit the geometry of upper peripheral edge **46** to further contain perfuming material **18** within the present invention. Also shown in Fig. 11 is the two-sided adhesive mounting pad **33**, affixed to mounting surface **28**. An alternative fastening method for fastening the present invention to computer monitor **10** could be the employment of

20 hooks and loops fasteners, such as Velcro ®.

Although only a few exemplary embodiments of the invention have been described in detail above, those skilled in the art will readily

appreciate that many modifications are possible in the exemplary  
embodiments without materially departing from the novel teachings and  
advantages of this invention. Accordingly, all such modifications are  
intended to be included within the scope of this invention as defined in  
5 the following claims. In the claims, means-plus-functions clauses are  
intended to cover the structures described herein as performing the  
recited functions and not only structural equivalents but also equivalent  
structures.

10

{This Space Intentionally Blank}